



**4910-13**

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 71**

**[Docket No. FAA-2017-0653; Airspace Docket No. 17-AWA-2]**

**Proposed Amendment of Class B Airspace; San Francisco, CA**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** This action proposes to modify the San Francisco, CA, Class B airspace area to contain aircraft conducting instrument flight rules (IFR) instrument approach procedures to San Francisco International Airport (SFO), San Francisco, CA. The FAA is taking this action to improve the flow of air traffic, enhance safety, and reduce the potential for midair collision in the SFO Class B airspace area while accommodating the concerns of airspace users. Further, this effort supports the FAA's national airspace redesign goal of optimizing terminal and enroute airspace to reduce aircraft delays and improve system capacity.

This notice does not constitute either a final decision of the FAA or a re-opening of the FAA's August 6, 2014, final decision for the Northern California (NorCal) Optimization of Airspace and Procedures in the Metroplex (OAPM) project.

**DATES:** Comments must be received on or before [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** Send comments on this proposal to the U.S. Department of Transportation, Docket Operations, 1200 New Jersey Avenue SE, West Building Ground Floor, Room W12-140, Washington, DC 20590-0001; telephone: 1 (800) 647-5527, or (202) 366-9826. You must

identify FAA Docket No. FAA-2017-0653 and Airspace Docket No. 17-AWA-2 at the beginning of your comments. You may also submit comments through the Internet at <http://www.regulations.gov>. You may review the public docket containing the proposal, any comments received, and any final disposition in person in the Dockets Office between 9:00 a.m. and 5:00 p.m., Monday through Friday, except Federal holidays. The Docket Office (telephone 1 (800) 647-5527), is on the ground floor of the building at the above address.

FAA Order 7400.11B, Airspace Designations and Reporting Points, and subsequent amendments can be viewed online at [http://www.faa.gov/air\\_traffic/publications/](http://www.faa.gov/air_traffic/publications/). For further information, you can contact the Airspace Policy Group, Federal Aviation Administration, 800 Independence Avenue, SW, Washington, DC, 20591; telephone: (202) 267-8783. The Order is also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of FAA Order 7400.11B at NARA, call (202) 741-6030, or go to <https://www.archives.gov/federal-register/cfr/ibr-locations.html>.

FAA Order 7400.11, Airspace Designations and Reporting Points, is published yearly and effective on September 15.

**FOR FURTHER INFORMATION CONTACT:** Kenneth Ready, Airspace Policy Group, Office of Airspace Services, Federal Aviation Administration, 800 Independence Avenue, SW, Washington, DC 20591; telephone: (202) 267-8783.

**SUPPLEMENTARY INFORMATION:**

**Authority for this Rulemaking**

The FAA's authority to issue rules regarding aviation safety is found in Title 49 of the United States Code. Subtitle I, Section 106 describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the agency's authority.

This rulemaking is promulgated under the authority described in Subtitle VII, Part A, Subpart I, Section 40103. Under that section, the FAA is charged with prescribing regulations to assign the use of the airspace necessary to ensure the safety of aircraft and the efficient use of airspace.

This regulation is within the scope of that authority as it would modify the San Francisco, CA, Class B airspace area to improve the flow of air traffic and enhance safety within the National Airspace System (NAS).

### **Comments Invited**

Interested parties are invited to participate in this proposed rulemaking by submitting such written data, views, or arguments as they may desire. Comments that provide the factual basis supporting the views and suggestions presented are particularly helpful in developing reasoned regulatory decisions on the proposal. Comments are specifically invited on the overall regulatory, aeronautical, economic, aspects of the proposal.

Communications should identify both docket numbers (FAA Docket No. FAA-2017-0653 and Airspace Docket No. 17-AWA-2) and be submitted in triplicate to the Docket Management Facility (see “ADDRESSES” section for address and phone number). You may also submit comments through the Internet at <http://www.regulations.gov>.

Commenters wishing the FAA to acknowledge receipt of their comments on this action must submit with those comments a self-addressed, stamped postcard on which the following statement is made: “Comments to Docket Nos. FAA-2017-0653 and Airspace Docket No. 17-AWA-2.” The postcard will be date/time stamped and returned to the commenter.

All communications received on or before the specified closing date for comments will be considered before taking action on the proposed rule. The proposal contained in this action may be changed in light of comments received. All comments submitted will be available for

examination in the public docket both before and after the closing date for comments. A report summarizing each substantive public contact with FAA personnel concerned with this rulemaking will be filed in the docket.

### **Availability of NPRMs**

An electronic copy of this document may be downloaded through the Internet at <http://www.regulations.gov>. Recently published rulemaking documents can also be accessed through the FAA's web page at [http://www.faa.gov/air\\_traffic/publications/airspace\\_amendments/](http://www.faa.gov/air_traffic/publications/airspace_amendments/).

You may review the public docket containing the proposal, any comments received and any final disposition in person in the Dockets Office (see "ADDRESSES" section for address and phone number) between 9:00 a.m. and 5.00 p.m., Monday through Friday, except Federal holidays. An informal docket may also be examined during normal business hours at the office of the Western Service Center, Federal Aviation Administration, 1601 Lind Ave, SW, Renton, WA 98057.

### **Availability and Summary of Documents for Incorporation by Reference**

This document proposes to amend FAA Order 7400.11B, airspace Designations and Reporting Points, dated August 3, 2017, and effective September 15, 2017. FAA Order 7400.11B is publicly available as listed in the ADDRESSES section of this document. FAA Order 7400.11B lists Class A, B, C, D, and E airspace areas, air traffic service routes, and reporting points.

### **Background**

The FAA issued a final rule establishing the San Francisco, CA, Terminal Control Area (37 FR 21928, October, 17, 1972), Airspace Docket No. 72-WA-10, FR. Doc. 72-17641. As a

result of the Airspace Reclassification final rule (56 FR 65638, December 17, 1991) Docket No. 24456, FR Doc. 91-29869, which became effective in 1993, the terms “terminal control area” and “airport radar service area” were replaced by “Class B airspace area” and “Class C airspace area,” respectively. The primary purpose of a Class B airspace area is to reduce the potential for midair collisions in the airspace surrounding airports with high-density air traffic operations by providing an area in which all aircraft are subject to certain operating rules and equipment requirements.

The SFO Class B airspace area was last modified in 2000 (65 FR 36060, June 7, 2000), Airspace Docket No. 97-AWA-1, FR Doc. 00-14046, using air traffic activity levels from the 1990s, and has not been modified since. The following activities have occurred since then making it appropriate to redesign the current San Francisco Class B airspace.

- Updates to instrument approach procedure charting criteria.
- Advances in flight deck technology that allows aircraft automation to manage both the lateral and vertical flight path.
- Advances in airframe technology, specifically efficiencies in wing design.
- Industry adoption of “optimized profile descent” procedures that provide a constant angle descent into the terminal area.
- Industry-wide migration to satellite-based global positioning system (GPS) area navigation procedures from procedures utilizing ground-based navigational facilities.

In 2014, as part of the Next Generation Air Transportation System (NextGen),<sup>1</sup> the FAA completed the NorCal OAPM project. The OAPM initiatives, generally, address airspace

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<sup>1</sup> To achieve NextGen goals, the FAA is implementing new Area Navigation (RNAV) and Required Navigation Performance (RNP) air traffic routes and instrument procedures RNAV Standard Instrument Departures (SIDs), RNAV Standard Terminal Arrival Routes (STARs), and RNAV Standard Instrument Approach Procedures (SIAPs)

congestion, airports in close geographical proximity, and other limiting factors that reduce efficiency in busy metroplex airspace. The NorCal OAPM project included 14 new RNAV STARs, 18 new RNAV SIDs, 2 revised existing RNAV Stars, 22 existing conventional STARs, and 28 existing conventional SIDs. As part of the NorCal OAPM project, the FAA conducted an environmental assessment under the National Environmental Policy Act of 1969 (NEPA) (42 USC 4321, et seq.) and on August 7, 2014 issued its Finding of No Significant Impact (FONSI) and Record of Decision (ROD).

Consistent with the recent NorCal OAPM project, the proposed modifications to the SFO Class B airspace area moves the identification methods of the Class B airspace away from reliance on ground-based navigational aids to utilizing GPS technology and leveraging the increased use of graphical flight system displays. The proposed airspace modifications are based on current lateral flight paths and take into account the NorCal OAPM-implemented satellite-based area navigation procedures at San Francisco International Airport. These NorCal OAPM-based RNAV arrival procedures, known as “Optimized Profile Descents”, utilize a shallow descent angle consistent with today’s aircraft design to allow for a more fuel-efficient descent profile. Today’s SFO fleet consists of new-generation aircraft such as the B737-NG, B747-400, B777, B787, and the A321, A340, A380. The newer generation of aircraft utilize a more efficient wing design that requires a shallower descent at reduced power levels.

Moreover, due to limitations of the current SFO Class B airspace configuration, air traffic had to interrupt the optimal profile descent on instrument approach procedures to keep aircraft

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that use emerging technologies and aircraft navigation capabilities. The implementation of RNAV and RNP procedures enables the use of other Performance Based Navigation (PBN) technology in the NAS, and facilitates more efficient procedures such as Optimized Profile Descents (OPD). The FAA complies with the requirements of applicable federal environmental statutes, regulations and FAA procedures, standards and Orders, including community outreach, as appropriate, before it undertakes and implements new procedures or potential modifications to currently published procedures.

within Class B airspace while flying published instrument approach procedures, which is contrary to FAA Orders guidance. Modeling of existing traffic flows has shown that the proposed expanded Class B airspace would enhance safety by containing all instrument approach procedures, and associated traffic patterns, within the confines of Class B airspace and better segregate IFR aircraft arriving/departing SFO and visual flight rules (VFR) aircraft operating in the vicinity of the SFO Class B airspace area. The proposed Class B airspace modifications described in this NPRM are intended to address these issues.

In areas where current Class B airspace is no longer required to contain San Francisco International Airport arrivals or departures, the FAA is proposing to remove that airspace from the proposed Class B airspace modifications and re-designate it as Class E or Class G airspace, as appropriate.

### **Pre-NPRM Public Input**

In 2015, the FAA initiated action to form an Ad Hoc Committee to seek input and recommendations from representatives of effected aviation segments for the FAA to consider in designing proposed modifications to the SFO Class B airspace area. Participants in the committee included representatives from the National Business Aviation Association (NBAA), Aircraft Owners and Pilots Association (AOPA), Airlines Pilot Association (ALPA), California Pilots Association, San Carlos Airport Association, Palo Alto Pilots Association, California Department of Transportation, California Highway Patrol, United and Southwest Airlines, City of Palo Alto, United States Coast Guard, San Mateo County Airports, San Francisco Airport Commission, and Hewlett Packard Enterprise. The Ad Hoc Committee report included general group consensus recommendations and individual recommendations. A copy of the report has been placed in the docket for this rulemaking action.

As announced in the FEDERAL REGISTER (81 FR 78756, November 9, 2016), FR Doc. 2016-27089, three informal airspace meetings were held; one each on January 30, 2017, at the Burlingame Public Library, Burlingame, CA; on January 31, 2017, at the Martin Luther King Library, San Jose, CA; and on February 1, 2017, at the Port of Oakland Building, Oakland, CA. These meetings provided interested airspace users with an opportunity to present their views and offer recommendations regarding the planned modification of the SFO Class B airspace area.

All substantive airspace recommendations made by the Ad Hoc Committee and public comments received as a result of the informal airspace meetings, regarding proposed modifications to the SFO Class B airspace area, were considered in developing this proposal.

#### **Discussion of Ad Hoc Committee Recommendations and Comments**

The Ad Hoc Committee recommended the FAA modify the design of the current Class B surface area (Area A) by moving the southern boundary slightly north to follow Interstate 280 and defining the northern and eastern boundaries using a DME arc off of the SFO VOR/DME.

The FAA partially adopted this recommendation by moving the Area A southern boundary northward, to the extent practicable, but is proposing to describe the northern and eastern boundaries recommended arc using geographic coordinates to move the identification of the SFO Class B airspace area away from a reliance on using ground-based navigational aids in favor of using GPS technology and leveraging the increased use of graphical flight system displays.

The Ad Hoc Committee suggested the FAA review the design of the proposed Area N further for opportunities of greater stratification or subdivision. They noted the underlying area included high terrain and that it would benefit general aviation to have higher altitudes to operate beneath the Class B airspace and offered that a new fix on the SERFR Two STAR, with an



altitude crossing restriction of at or above 8,000 feet, should be considered as a method to provide a higher floor altitude within this area.

The FAA reviewed the proposed Area N as suggested and adopted this recommendation; adjusting the proposed Area N floor of Class B airspace to be 8,000 feet MSL, accordingly. Additionally, to ensure the SFO SERFR STAR is contained within the existing Class B airspace area, the FAA plans to add an altitude crossing restriction of “at or above 8,000 feet MSL” approximately 8 miles southeast of the EDDYY waypoint.

The Ad Hoc Committee also suggested the FAA evaluate the design of proposed Area Q further for consolidation [presumably with other proposed Class B sub-areas] and to align the eastern boundary with a VOR/DME arc and/or prominent geographical landmarks (preferably both). The Ad Hoc Committee recommended adjusting the eastern boundary by relocating it to the southern edge of Lake Del Valle and proceed southbound to Mount Hamilton or using the SFO 33-mile DME arc.

The FAA does not agree with this recommendation. The eastern boundary of Area Q is located where IFR arriving aircraft are descending via the DYMND and YOSEM STARs passing through 10,000 feet MSL. Moving the boundary westward to Lake Del Valle is not considered operationally feasible by air traffic control. Additionally, relying on an arc off the SFO DME would result in an unnecessary increase in the size of Class B airspace. However, the FAA plans to establish VFR waypoints at Cedar Mountain and Lick Observatory (atop Mount Hamilton) to aid VFR pilots with visually identifying the lateral confines of the proposed Class B airspace.

In addition to the three specific recommendation above, the Ad Hoc Committee went on to offer a number of general recommendations that included amending the Oakland Class C

airspace area concurrently with this action, disclosing whether any proposed airspace changes are the result of a trend of Traffic alert and Collision Avoidance System (TCAS) resolution advisories (RAs), publishing SFO Class B airspace amendments to coincide with VFR Class B Enhancement Graphic initiatives, defining new VFR transition routes to circumnavigate Class B airspace areas using prominent geographic landmarks and VFR waypoints, including an insert depicting commonly used Oakland overflight routes on the SFO Flyway Planning Chart, defining the Class B airspace sub-areas using VOR/DME radial and arcs and/or prominent geographic landmarks, containing Class B airspace areas with the associated Mode C veil, depicting the STAR/SID fix closest to the outer boundary of Class B airspace should be show on VFR Flyway Planning Charts and IFR Enroute Charts, and conducting extensive outreach prior to informal airspace meetings to ensure comment periods are adequately advertised.

The FAA has considered the general recommendations provided by the Ad Hoc Committee and offers the following. Modifying the Oakland Class C airspace concurrently with this action is outside the scope of this action. With respect to the use of TCAS RA reports or trends, they are generally a consideration in many Class B amendment actions; however, they were not used to justify this proposed action. To the recommendations associated with the VFR Class B Enhancement Graphic initiatives, defining new VFR transition routes, depicting commonly used overflight routes on Flyway Planning Charts, defining Class B airspace sub-areas using radials, arcs, or geographic landmarks, depicting STAR/SID fixes closest to the outer boundary of Class B airspace areas, and conducting extensive outreach prior to informal airspace meetings, they all have merit and the FAA plans to consider the recommendations as provided. Lastly, for the recommendation addressing containment of Class B airspace areas within

associated Mode C veils, further consideration is required since Class B airspace areas and the Mode C veil around Class B primary airports are not dependent on each other.

Several recommendations from individual Ad Hoc Committee members raised concerns/issues regarding the development of air traffic management tools, perceived concerns over existing instrument procedures and/or air traffic control services at SFO, concurrent modifications to Oakland Class C airspace, regulatory airspeed restrictions, and general complaints about the philosophy, policy, and processing actions underpinning the rulemaking requirements for modifying Class B airspace areas. These concerns/issues are not addressed as part of this proposal.

### **Discussion of Informal Airspace Meeting Comments**

As a result of the informal airspace meetings, the FAA received comments from 51 commenters, including 3 organizations that represented one or more groups of individuals.

Thirty-four comments were received from 28 individuals and one organization representing multiple citizen groups raising concerns with respect to potential noise impacts as a result of the proposed airspace changes. Most of the comments cited a recent increase in noise due to changes in air traffic flight patterns within the last year.

The Class B airspace redesign development process is intended to identify and address safety concerns associated with the proposed airspace configuration. The designation or modification of this proposed airspace does not create an adverse environmental impact. The FAA complies with the requirements of applicable federal statutes, regulations and its internal Orders, including evaluating noise impacts associated with all new air traffic procedures and potential modifications to currently published procedures. Therefore, environmental evaluations and considerations are followed and undertaken before implementing instrument flight

procedures, including when appropriate Diverse Vector Areas, not the designation of controlled airspace areas to contain those procedures. The FAA is continuing its work on an initiative requested by three congressional representatives to address existing noise concerns in Santa Cruz, Santa Clara, San Mateo, and San Francisco Counties. Additionally, concerned citizens can contact the FAA's Aviation Noise Ombudsman to submit existing noise complaints at email [9-AWA-noiseOmbudsman@faa.gov](mailto:9-AWA-noiseOmbudsman@faa.gov).

Eight commenters cited an expected negative impact on glider and general aviation practice operations near Mount Diablo due to the eastward expansion of Class B airspace.

The FAA adjusted the proposed Class B airspace boundaries in the vicinity of the glider and general aviation practice operations near Mount Diablo by moving the boundaries westward to mitigate these concerns, as much as possible, while still ensuring containment of IFR arrival aircraft within Class B airspace. Additionally, the floor of the proposed Class B airspace near Mount Diablo was retained at 6,000 feet MSL in one sub-area and raised from 6,000 feet MSL to 7,000 feet MSL in another to accommodate the glider and general aviation aircraft operations near the proposed Class B airspace area.

Eight commenters expressed a general dissatisfaction with the informal public meeting schedule, location, and/or briefing materials.

The FAA held three informal airspace meetings on separate days and in different locations to seek public input from different communities underlying the proposed Class B airspace to aid in developing this proposed modification of the SFO Class B airspace area. The FAA recognizes the benefits associated with hosting informal airspace meetings and seeking input on airspace actions from the public; requiring notices of informal airspace meetings be sent 60 to 90 days prior to the first meeting to all known licensed pilots, state aviation agencies,

airport manager/operators, and operators of parachute, sailplane, ultra-light, and balloon clubs within a 100-mile radius of the primary airport for Class B airspace actions. As a result, these comments will be retained and considered in the planning of future informal public meetings to help the public better understand proposed airspace changes and to enhance substantive public input for future airspace actions.

Five commenters expressed support for the continuation and development of more VFR corridors to allow VFR pilots to transition the San Francisco Bay area without entering the Class B airspace. However, one of the five commenters also recommended that the FAA develop a VFR corridor with lateral and vertical paths through the Class B airspace area. With the exception of the commenter that actually recommended the FAA include a VFR Flight Corridor through SFO Class B airspace, the FAA read the other four commenters' inputs to actually be addressing support for the continuation of VFR flyways and not VFR corridors.

The FAA appreciates the support for retaining the VFR flyways that circumnavigate the SFO Class B airspace area, but does not agree with developing a VFR corridor through the Class B airspace. The current Class B airspace area has five VFR flyways that surround the Class B surface area and reside under the Class B shelves. Three of the five VFR flyways also have alternate transitions to further support circumnavigating around and under Class B airspace. With the proposed modifications to the SFO Class B airspace area, four flyways will remain unchanged, but one VFR flyway, located southeast of SFO, will require a 400-foot reduction of the suggested altitude, from below 2,500 to below 2,100, for the portion of the flyway that falls under proposed new Area F. The FAA believes that these existing VFR flyway options are sufficient to continue supporting the VFR aircraft flying in the vicinity of SFO.

Four commenters cited safety concerns for VFR aircraft operations beneath the floor of the proposed Class B airspace due to congestion, proximity to terrain, and airspace for a safe glide distance over San Francisco Bay.

The FAA is taking action to modify the current class B airspace to contain all instrument procedures at SFO and the aircraft flying those procedures within Class B airspace, once they have entered it, to overcome the IFR aircraft entering, exiting, and re-entering Class B airspace while flying published instrument approaches and associated traffic patterns. The FAA acknowledges that some compression will occur and that non-participating VFR aircraft will have to fly above, below, or circumnavigate the proposed SFO Class B airspace in order to remain clear of it should they decide not to seek Class B airspace services. The floors of the proposed Class B airspace sub-areas were adjusted in most of the areas to the extent possible to raise the floor of the Class B airspace and mitigate the concerns. All aircraft operating beneath or in the vicinity of the SFO Class B airspace area are expected to continue to comply with the regulatory requirements of Title 14 of the Code of Federal Regulations (14 CFR) §91.111, titled Operating Near Other Aircraft, to avoid creating a collision hazard with other aircraft operating in the same airspace. Additionally, all aircraft operating in the same areas noted above are expected to continue complying 14 CFR §91.113, titled Right-of-Way Rules: Except Water operations, to “see and avoid” other aircraft as well. The FAA believes that continued general aviation pilot compliance with established flight rules regulatory requirement, and these two regulations specifically, will overcome the safety concerns raised by the commenters.

Two commenters stated the use of geographic coordinates-- instead of distances from navigation aids (NAVAIDs) or other reference points to define the individual airspace areas-- would make navigation around, and the avoidance of, Class B airspace more difficult.

The FAA acknowledges the concerns of the commenters, but has determined the use of geographic coordinates to define the Class B airspace area enables a much smaller area of Class B airspace to be designated or established to contain all IFR instrument procedures and arrival/departure operations. Further, the FAA believes the current trend toward increased use of GPS navigation and position tracking will mitigate the concern.

Two commenters suggested the use of waypoints to facilitate the identification of the boundaries of Class B airspace areas.

The FAA plans to adopt the commenters' suggestion. The development, designation, and charting of waypoints will follow established Aeronautical Information Services (AIS) processing requirements while the rulemaking requirements for proposing and designating Class B airspace modifications are accomplished. Collectively, that will result in the FAA using waypoints to identify Class B airspace boundaries.

One comment was received from a user group associated with the United States Hang Gliding and Paragliding Association, including 39 individual names, outlining the negative impact on hang glider operations within the Golden Gate National Recreation Area, and requesting specific adjustments.

The FAA was able to partially adopt the Association's requested adjustments by amending the western boundary of the proposed Class B surface area airspace along the shore to minimize the impact to hang glider operations at the Fort Funston and Pacifica hang gliding and paragliding sites in the greater bay area, to the extent possible.

One commenter expressed a safety concern that the expansion of Class B airspace into the Sunnyvale, CA area will result in aircraft arriving at San Francisco and San Jose using the same airspace simultaneously and may present a hazard to residents below.

The FAA does not agree. The proposed modifications to the SFO Class B airspace area and the FAA's August 7, 2014 issuance of NorCal OAPM procedures for operations within the San Francisco terminal area were designed to keep aircraft arriving and departing at the San Francisco and San Jose International Airports segregated; ensuring safe and efficient arrival and departure operations at both locations.

One commenter questioned whether the FAA can regulate airspace more than 12 miles off the coast of the United States.

As part of this proposal relates to the navigable airspace outside the United States, this notice is submitted in consonance with the ICAO International Standards and Recommended Practices. Article 12 of the Chicago Convention provides that over the high seas the rules in force shall be those established under the Convention. Applicability of International Standards and Recommended Practices by the Air Traffic Service, FAA, in areas outside domestic airspace of the United States is governed by Annexes 2 and 11 to the Convention on International Civil Aviation, which pertain to the rules of the air and the establishment of air navigation facilities and services necessary to promoting the safe, orderly, and expeditious flow of civil air traffic. Their purpose is to insure that civil flying on international air routes is carried out under uniform conditions designed to improve the safety and efficiency of air operations.

The International Standards and Recommended Practices in Annex 11 apply in those parts of the airspace under the jurisdiction of a contracting state, derived from the International Civil Aviation Organization (ICAO), wherein air traffic services are provided and also whenever a contracting state accepts the responsibility of providing air traffic services over high seas or in airspace of undetermined sovereignty. A contracting state accepting such responsibility may



apply the International Standards and Recommended Practices to civil aircraft in a manner consistent with that adopted for airspace under its domestic jurisdiction.

## **The Proposal**

The FAA is proposing an amendment to Title 14 of the Code of Federal Regulations (14 CFR) part 71 to modify the SFO Class B airspace area. This action (depicted on the attached graphic) moves away from the three concentric circle (upside down wedding cake) design configuration and is redrawn based on arrival and departure routes into and out of SFO. Using this design approach allows the FAA to minimize the Class B airspace necessary to contain instrument procedures within Class B airspace for aircraft arriving and departing SFO and to re-designate current Class B airspace as Class E or Class G to make it available for nonparticipant aircraft circumnavigating the Class B airspace area. Additionally, the proposed modifications would better segregate IFR aircraft arriving/departing SFO and VFR aircraft operating in the vicinity of the SFO Class B airspace area. The proposed modifications to the SFO Class B airspace area are discussed below.

**Area A.** The FAA proposes to modify the current Area A by moving the southern boundary northward to accommodate local hang glide operations, as much as possible. Minor modifications to the current Area A northeast boundary are also incorporated by using geographic coordinates to define the surface area in the proposed legal description.<sup>2</sup> The new Area A would continue to extend upward from the surface, to and including 10,000 feet MSL.

**Area B.** The FAA proposes to modify the current Area B by moving the southern boundary northward, the eastern boundary westward, and incorporating a small portion of the

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<sup>2</sup> The Ad Hoc Committee found the modified design of existing Area A could be improved by the southern boundary being relocated slightly north to follow Interstate 280. Additionally, the northern and eastern boundary should be defined by a DME arc off of the SFO VOR/DME. The FAA agreed with this recommendation and has adjusted Area A in the NPRM to reflect geographic latitudes and longitudes to mimic an arc.

current Area F. The proposed Area B would also lower the floor of Class B airspace from the current Area B from 1,500 MSL to 1,400 MSL and from the current Area F portion from 2,100 feet MSL to 1,400 feet MSL. The new Area B would extend upward from 1,400 feet MSL, to and including 10,000 feet MSL.

**Area C.** The FAA proposes to establish a new Area C, located to the west of SFO beyond the proposed Area A, by incorporating small portions of the current Area F and current Area I. The proposed Area C would lower the floor of Class B airspace from the current Area F portion from 2,100 feet MSL to 1,600 feet MSL and raise the floor of Class B airspace from the current Area I portion from 1,500 feet MSL to 1,600 feet MSL. The new Area C would extend upward from 1,600 feet MSL, to and including 10,000 feet MSL.

**Area D.** The FAA proposes to establish a new Area D, located to the west of SFO beyond the proposed Area C, by incorporating small portions of the current Area F, current Area G, and current Area I. The proposed Area D would retain the floor of Class B airspace from the current Area F portion at 2,100 feet MSL, lower the floor of Class B airspace from the current Area G portion from 3,000 feet MSL to 2,100 feet MSL, and raise the floor of Class B airspace from the current Area I portion from 1,500 feet MSL to 2,100 feet MSL. The new Area D would extend upward from 2,100 feet MSL, to and including 10,000 feet MSL.

**Area E.** The FAA proposes to establish a new Area E, located northwest of SFO extending clockwise to east of SFO beyond the proposed Area A, by incorporating a sliver of the current Area A and small portions of the current Area F and current Area G. The proposed Area E would raise the floor of Class B airspace from the current Area A portion from the surface to 2,100 feet MSL, retain the floor of Class B airspace from the current Area F portion at 2,100 feet MSL, and lower the floor of Class B airspace from the current Area G portion from 3,000 feet

MSL to 2,100 feet MSL. The new Area E would extend upward from 2,100 feet MSL, to and including 10,000 feet MSL.

**Area F.** The FAA proposes to establish a new Area F, located to the southeast of SFO beyond the proposed Area B, by incorporating small portions of the current Area B, current Area C, current Area F, and current Area G. The proposed Area F would raise the floor of Class B airspace from the current Area B portion from 1,500 feet MSL to 2,100 feet MSL, lower the floor of Class B airspace from the current Area C portion from 2,500 feet MSL to 2,100 feet MSL and current Area G portion from 3,000 feet MSL to 2,100 feet MSL, and retain the floor of Class B airspace from the current Area F portion at 2,100 feet MSL. The new Area F would extend upward from 2,100 feet MSL, to and including 10,000 feet MSL.

**Area G.** The FAA proposed to establish a new Area G, located to the northwest of SFO beyond the proposed Area D and proposed Area E, by incorporating small portions of the current Area A, current Area F, current Area G, current Area H, and current Area I. The proposed Area G would raise the floor of Class B airspace from the current Area A portion from the surface to 3,000 feet MSL, current Area F portion from 2,100 feet MSL to 3,000 feet MSL, and current Area I portion from 1,500 feet MSL to 3,000 feet MSL; retain the floor of Class B airspace from the current Area G portion at 3,000 feet MSL; and lower the floor of Class B airspace from the current Area H portion from 4,000 feet MSL to 3,000 feet MSL. Additionally, the FAA would be establishing a sliver of Class B airspace beyond the current Area H external SFO Class B boundary. The new Area G would extend upward from 3,000 feet MSL, to and including 10,000 feet MSL.

**Area H.** The FAA proposes to establish a new Area H, located southeast of SFO beyond the proposed Area E and proposed Area F, by incorporating small portions of the current Area A,

current Area B, current Area C, current Area D, current Area F, and current Area G. The proposed Area H would raise the floor of Class B airspace from the current Area A portion from the surface to 3,000 feet MSL, current Area B portion from 1,500 feet MSL to 3,000 feet MSL, current Area C portion from 2,500 feet MSL to 3,000 feet MSL, and current Area F portion from 2,100 feet MSL to 3,000 feet MSL; retain the floor of Class B airspace from the current Area G portion at 3,000 feet MSL; and lower the floor of Class B airspace from the current Area D portion from 4,000 feet MSL to 3,000 feet MSL. The new Area H would extend upward from 3,000 feet MSL, to and including 10,000 feet MSL.

**Area I.** The FAA proposes to establish a new Area I, located north of SFO extending clockwise around and to the west of SFO beyond the proposed Area E, proposed Area G, and proposed Area H, by incorporating small portions of the current Area A, current Area C, current Area D, current Area E, current Area F, current Area G, current Area H, current Area I, and current Area K. The proposed Area I would raise the floor of Class B airspace from the current Area A portion from the surface to 4,000 feet MSL, current Area C portion from 2,500 feet MSL to 4,000 feet MSL, current Area F portion from 2,100 feet MSL to 4,000 feet MSL, current Area G portion from 3,000 feet MSL to 4,000 feet MSL, current Area I portion from 1,500 feet MSL to 4,000 feet MSL; retain the floor of Class B airspace from the current Area D portion and current Area H portion at 4,000 feet MSL; and lower the floor of Class B airspace from the slivers of the current Area E portion from 6,000 feet MSL to 4,000 feet MSL and current Area K portion from 5,000 feet MSL to 4,000 feet MSL. Additionally, the FAA would be establishing Class B airspace beyond the current Area E and current Area H external SFO Class B boundaries. The new Area I would extend upward from 4,000 feet MSL, to and including 10,000 feet MSL.

**Area J.** The FAA proposes to establish a new Area J, located north of SFO beyond the proposed Area G and proposed Area I, by incorporating small portions of the current Area D, current Area E, current Area G, and current Area H. The proposed Area J would raise the floor of Class B airspace from the current Area G portion from 3,000 feet MSL to 5,000 feet MSL and the current Area D portion and current Area H portion from 4,000 feet MSL to 5,000 feet MSL, and lower the floor of Class B airspace from the current Area E portion from 6,000 feet MSL to 5,000 feet MSL. Additionally, the FAA would be establishing Class B airspace beyond the current Area D, current Area E, and current Area G external SFO Class B boundaries. The new Area J would extend upward from 5,000 feet MSL, to and including 10,000 feet MSL.

**Area K.** The FAA proposes to establish a new Area K, located north of SFO beyond the proposed Area I and proposed Area L (described below), by incorporating small portions of the current Area D and current Area E. The proposed Area K would raise the floor of Class B airspace from the current Area D portion from 4,000 feet MSL to 5,000 feet MSL and retain the floor of Class B airspace from the current Area E portion at 6,000 feet MSL. Additionally, the FAA would be establishing a sliver of Class B airspace beyond the current Area E external SFO Class B boundary. The new Area K would extend upward from 6,000 feet MSL, to and including 10,000 feet MSL.

**Area L.** The FAA proposes to establish a new Area L, located northeast of SFO beyond the proposed Area I, by incorporating small portions of the current Area D and current Area E. The proposed Area L would raise the floor of Class B airspace from the current Area D portion from 4,000 feet MSL to 5,000 feet MSL and lower the floor of Class B airspace from the current Area E portion from 6,000 feet MSL to 5,000 feet MSL. The new Area L would extend upward from 5,000 feet MSL, to and including 10,000 feet MSL.

**Area M.** The FAA proposes to establish a new Area M, located south of SFO beyond the proposed Area I, by incorporating portions of the current Area D, current Area E, current Area G, current Area J, and current Area K. The proposed Area M would raise the floor of Class B airspace from the current Area D portion from 4,000 feet MSL to 6,000 feet MSL, current Area G portion from 3,000 feet MSL to 6,000 feet MSL, and current Area K portion from 5,000 feet MSL to 6,000 feet MSL; retain the floor of Class B airspace from the current Area E portion at 6,000 feet MSL; and lower the floor of Class B airspace from the current Area J from 8,000 feet MSL to 6,000 feet MSL. Additionally, the FAA would be establishing Class B airspace beyond the current Area E and current Area J external SFO Class B boundaries. The new Area M would extend upward from 6,000 feet MSL, to and including 10,000 feet MSL.

**Area N.** The FAA proposes to establish a new Area N, located south-southeast of SFO beyond the proposed Area M, by incorporating small portions of the current Area E and current Area J. The proposed Area N would raise the floor of Class B airspace from the current Area E portion from 6,000 feet MSL to 8,000 feet MSL and retain the floor of Class B airspace from the current Area J portion at 8,000 feet MSL. Additionally, the FAA would be establishing Class B airspace beyond the current Area J external SFO Class B boundary. The new Area N would extend upward from 8,000 feet MSL, to and including 10,000 feet MSL and have a higher floor from Area M due to accommodate VFR aircraft operating in higher terrain below the Class B airspace.<sup>3</sup>

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<sup>3</sup> The Ad Hoc Committee found the design of Area N should be further reviewed by the FAA for opportunities of greater stratification or subdivision. They noted the underlying area included high terrain and that it would benefit general aviation to have higher altitudes to operate beneath the Class B airspace and offered that a new fix on the SERFR Two STAR, with an altitude crossing restriction of “at or above 8,000 feet” approximately 8 miles southeast of the EDDYY waypoint, should be considered as a method to provide a higher floor altitude. To clarify, the FAA is in the process of amending SERFR2 for containment within the existing Class Bravo airspace. However, the FAA reviewed the proposed Area N as suggested and adopted this recommendation; adjusting the proposed Area N floor of Class B airspace to extend upward from 8,000 feet MSL.

**Area O.** The FAA proposes to establish a new Area O, located northeast of SFO beyond the proposed Area L, within a portion of the current Area E. The proposed Area O would raise the floor of Class B airspace from the current Area E portion from 6,000 feet MSL to 7,000 feet MSL to accommodate VFR traffic below due to higher terrain (Mount Diablo) and frequent use by general aviation aircraft. Additionally, the FAA would be establishing a sliver of Class B airspace beyond the current Area E external SFO Class B boundary. The new Area O would extend upward from 7,000 feet MSL, to and including 10,000 feet MSL.

**Area P.** The FAA proposes to establish a new Area P, located east-southeast of SFO beyond the proposed Area M, within a portion of the current Area J. The proposed Area P would lower the floor of Class B airspace from the current Area J portion from 8,000 feet MSL to 7,000 feet MSL. Additionally, the FAA would be establishing a small portion of Class B airspace beyond the current Area J external SFO Class B boundary. The new Area P would extend upward from 7,000 feet MSL, to and including 10,000 feet MSL.

**Area Q.** The FAA proposes to establish a new Area Q, located east of SFO beyond the proposed Area I and proposed Area P, within a portion of the current Area E and current Area J. The proposed Area P would raise the floor of Class B airspace from the current Area E portion from 6,000 feet MSL to 8,000 feet MSL and retain the floor of Class B airspace from the current Area J portion at 8,000 feet MSL. Additionally, the FAA would be establishing Class B airspace beyond the current Area E and current Area J external SFO Class B boundaries to capture delay vectoring for runway 10 and 19 arrivals.<sup>4</sup> The new Area Q would extend upward from 8,000

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<sup>4</sup> The Ad Hoc Committee suggested the FAA evaluate Area Q further for consolidation and to align the eastern boundary with a VOR/DME arc and/or prominent landmarks (preferably both). The Ad Hoc Committee urged the eastern boundary be relocated to the southern edge of Lake Del Valle proceeding southward to Mount Hamilton or use the SFO 33-mile DME arc. The FAA disagreed. The eastern boundary of Area Q is located where aircraft descending via the DYMND and YOSEM STARs pass through 10,000 feet MSL, moving the boundary westward to Lake Del Valle is not operationally feasible, and relying on an arc would result in an unnecessary increase in the size

feet MSL, to and including 10,000 feet MSL. Proposed are Q would expand the Class B airspace east of SFO beyond 30 NM

### **Paperwork Reduction Act**

The Paperwork Reduction Act of 1995 (44 U.S.C. 3507(d)) requires that the FAA consider the impact of paperwork and other information collection burdens imposed on the public. We have determined that there is no new information collection requirement associated with this proposed rule.

### **Regulatory Evaluation**

Changes to Federal regulations must undergo several economic analyses. First, Executive Order 12866 and Executive Order 13563 direct that each Federal agency shall propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs. Second, the Regulatory Flexibility Act of 1980 (Pub. L. 96-354) requires agencies to analyze the economic impact of regulatory changes on small entities. Third, the Trade Agreements Act (Pub. L. 96-39) prohibits agencies from setting standards that create unnecessary obstacles to the foreign commerce of the United States. In developing U.S. standards, the Trade Act requires agencies to consider international standards and, where appropriate, that they be the basis of U.S. standards. Fourth, the Unfunded Mandates Reform Act of 1995 (Pub. L. 104-4) requires agencies to prepare a written assessment of the costs, benefits, and other effects of proposed or final rules that include a Federal mandate likely to result in the expenditure by State, local, or tribal governments, in the aggregate, or by the private sector, of \$100 million or more annually (adjusted for inflation with base year of 1995). This

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of Class B airspace. However, the FAA will establish VFR waypoints at Cedar Mountain and Lick Observatory (atop Mount Hamilton) to aid VFR pilots visually identifying the lateral confines of the Class B airspace.



portion of the preamble summarizes the FAA's analysis of the economic impacts of this proposed rule.

Department of Transportation Order DOT 2100.5 prescribes policies and procedures for simplification, analysis, and review of regulations. If the expected cost impact is so minimal that a proposed or final rule does not warrant a full evaluation, this order permits that a statement to that effect and the basis for it to be included in the preamble if a full regulatory evaluation of the cost and benefits is not prepared. Such a determination has been made for this proposed rule. The reasoning for this determination follows:

It is appropriate to redesign SFO Class B airspace for reasons described earlier including the availability of new procedures such as the use of "Optimized Profile Descents," advances in technology; migration to GPS from ground based navigation facilities and updated charting criteria.

This regulation proposes to modify the San Francisco, CA, (SFO) Class B airspace area to improve the flow of air traffic, enhance safety and reduce the potential for midair collision in the SFO Class B airspace area while accommodating the concerns of airspace users. This effort supports the FAA's national airspace redesign goal of optimizing terminal and enroute airspace to reduce aircraft delays and improve system capacity.

The Class B airspace redesign may enhance opportunities for more fuel-efficient descent profiles.

Further, the SFO Class B airspace redesign would enhance safety by containing IFR traffic arriving and departing SFO within the confines of Class B airspace and would better segregate IFR and VFR aircraft.

Finally, the regulation proposes returning current Class B airspace that is not being used for SFO airport arrivals or departures to the NAS.

Because it proposes to modify SFO Class B airspace to take advantage of more fuel efficient approaches and optimize terminal and enroute airspace to reduce delays and improve system capacity, the rule is expected to be a minimal cost rule with the potential to be minimal cost saving.

FAA has, therefore, determined that this proposed rule is not a “significant regulatory action” as defined in section 3(f) of Executive Order 12866, and is not “significant” as defined in DOT's Regulatory Policies and Procedures.

### **Regulatory Flexibility Determination**

The Regulatory Flexibility Act of 1980 (Pub. L. 96-354) (RFA) establishes “as a principle of regulatory issuance that agencies shall endeavor, consistent with the objectives of the rule and of applicable statutes, to fit regulatory and informational requirements to the scale of the businesses, organizations, and governmental jurisdictions subject to regulation.” To achieve this principle, agencies are required to solicit and consider flexible regulatory proposals and to explain the rationale for their actions to assure that such proposals are given serious consideration. The RFA covers a wide-range of small entities, including small businesses, not-for-profit organizations, and small governmental jurisdictions.

Agencies must perform a review to determine whether a rule will have a significant economic impact on a substantial number of small entities. If the agency determines that it will, the agency must prepare a regulatory flexibility analysis as described in the RFA.

However, if an agency determines that a rule is not expected to have a significant economic impact on a substantial number of small entities, section 605(b) of the RFA provides

that the head of the agency may so certify and a regulatory flexibility analysis is not required.

The certification must include a statement providing the factual basis for this determination, and the reasoning should be clear.

The redesign of the SFO Class B airspace will not affect a substantial number of small entities because the redesign does not alter or amend any existing flight path at SFO. Any change to an existing flight path would be achieved through a separate action. Therefore, the expected outcome, if any, would be a minimal economic impact on small entities affected by this rulemaking action. The FAA requests comments.

If an agency determines that a rulemaking will not result in a significant economic impact on a substantial number of small entities, the head of the agency may so certify under section 605(b) of the RFA. Therefore, as provided in section 605(b), the head of the FAA certifies that this rulemaking will not result in a significant economic impact on a substantial number of small entities.

### **International Trade Impact Assessment**

The Trade Agreements Act of 1979 (Pub. L. 96-39), as amended by the Uruguay Round Agreements Act (Pub. L. 103-465), prohibits Federal agencies from establishing standards or engaging in related activities that create unnecessary obstacles to the foreign commerce of the United States. Pursuant to these Acts, the establishment of standards is not considered an unnecessary obstacle to the foreign commerce of the United States, so long as the standard has a legitimate domestic objective, such as the protection of safety, and does not operate in a manner that excludes imports that meet this objective. The statute also requires consideration of international standards and, where appropriate, that they be the basis for U.S. standards. The

FAA has assessed the potential effect of this proposed rule and determined that it would improve safety and is consistent with the Trade Agreements Act.

### **Unfunded Mandates Assessment**

Title II of the Unfunded Mandates Reform Act of 1995 (Pub. L. 104-4) requires each Federal agency to prepare a written statement assessing the effects of any Federal mandate in a proposed or final agency rule that may result in an expenditure of \$100 million or more (in 1995 dollars) in any one year by State, local, and tribal governments, in the aggregate, or by the private sector; such a mandate is deemed to be a "significant regulatory action." The FAA currently uses an inflation-adjusted value of \$155 million in lieu of \$100 million. This proposed rule does not contain such a mandate; therefore, the requirements of Title II of the Act do not apply.

### **List of Subjects in 14 CFR Part 71**

Airspace, Incorporation by reference, Navigation (air).

### **The Proposed Amendment**

In consideration of the foregoing, the Federal Aviation Administration proposes to amend 14 CFR part 71 as follows:

#### **PART 71--DESIGNATION OF CLASS A, B, C, D, AND E AIRSPACE AREAS; AIR TRAFFIC SERVICE ROUTES; AND REPORTING POINTS**

1. The authority citation for part 71 continues to read as follows:

**Authority:** 49 U.S.C. 106 (f),106(g); 40103, 40113, 40120; E.O. 10854, 24 FR 9565, 3 CFR, 1959-1963 Comp., p. 389.

## § 71.1 [Amended]

2. The incorporation by reference in 14 CFR 71.1 of the FAA Order 7400.11B, Airspace Designations and Reporting Points, dated August 3, 2017, and effective September 15, 2017, is amended as follows:

### Paragraph 3000 Subpart B--Class B Airspace.

\* \* \* \* \*

#### AWP CA B San Francisco, CA

San Francisco International Airport (Primary Airport)

(lat. 37°37'08" N., long. 122°22'32" W.)

#### Boundaries.

**Area A.** That airspace extending upward from the surface to and including 10,000 feet MSL within the area bounded by a line beginning at lat. 37°41'40" N., long. 122°29'11" W.; to lat. 37°42'32" N., long. 122°28'07" W.; to lat. 37°43'08" N., long. 122°27'05" W.; to lat. 37°43'31" N., long. 122°26'10" W.; to lat. 37°43'52" N., long. 122°25'04" W.; to lat. 37°44'04" N., long. 122°24'05" W.; to lat. 37°44'10" N., long. 122°23'03" W.; to lat. 37°44'10" N., long. 122°21'53" W.; to lat. 37°44'03" N., long. 122°20'43" W.; to lat. 37°43'52" N., long. 122°19'49" W.; to lat. 37°43'37" N., long. 122°18'59" W.; to lat. 37°42'40" N., long. 122°16'43" W.; to lat. 37°40'21" N., long. 122°14'12" W.; to lat. 37°35'32" N., long. 122°14'06" W.; to lat. 37°33'53" N., long. 122°14'49" W.; to lat. 37°33'00" N., long. 122°15'24" W.; to lat. 37°33'39" N., long. 122°16'55" W.; to lat. 37°33'38" N., long. 122°17'48" W.; to lat. 37°32'57" N., long. 122°20'25" W.; to lat. 37°32'54" N., long. 122°22'20" W.; to lat. 37°33'08" N., long. 122°22'36" W.; to lat. 37°33'36" N., long. 122°22'58" W.; to lat. 37°33'56" N., long. 122°23'19" W.; to lat. 37°34'01" N., long. 122°23'34" W.; to lat. 37°34'17" N., long. 122°23'50" W.; to lat. 37°34'29" N., long. 122°24'01" W.; to lat. 37°35'00" N., long. 122°24'17" W.; to lat. 37°36'09" N., long. 122°25'36" W.; to lat. 37°36'22" N., long. 122°25'42" W.; to lat. 37°36'42" N., long. 122°25'34" W.; to lat. 37°38'26" N., long. 122°29'41" W.; to lat. 37°39'25" N., long. 122°29'41" W.; to lat. 37°40'32" N., long. 122°29'44" W.; to lat. 37°41'08" N., long. 122°29'46" W., thence to the point of beginning.

**Area B.** That airspace extending upward from 1,400 feet MSL to and including 10,000 feet MSL within the area bounded by a line beginning at lat. 37°35'32" N., long. 122°14'06" W.; to lat. 37°35'11" N., long. 122°11'13" W.; to lat. 37°32'49" N., long. 122°12'15" W.; to lat. 37°31'29" N., long. 122°13'08" W.; to lat. 37°33'00" N., long. 122°15'24" W.; to lat. 37°33'53" N., long. 122°14'49" W., thence to the point of beginning.

**Area C.** That airspace extending upward from 1,600 feet MSL to and including 10,000 feet MSL within the area bounded by a line beginning at lat. 37°41'25" N., long. 122°30'23" W.; to lat. 37°41'08" N., long. 122°29'46" W.; to lat. 37°40'32" N., long. 122°29'44" W.; to lat. 37°39'25" N., long. 122°29'41" W.; to lat. 37°40'04" N., long. 122°31'15" W.; to lat. 37°41'25" N., long. 122°30'23" W., thence to the point of beginning.

**Area D.** That airspace extending upward from 2,100 feet MSL to and including 10,000 feet MSL within the area bounded by a line beginning at lat. 37°44'35" N., long. 122°35'53" W.; to lat. 37°41'40" N., long. 122°29'11" W.; to lat. 37°41'08" N., long. 122°29'46" W.; to lat. 37°40'32" N., long. 122°29'44" W.; to lat. 37°39'25" N., long. 122°29'41" W.; to lat. 37°38'42" N., long. 122°29'41" W.; to lat. 37°38'26" N., long. 122°29'41" W.; to lat. 37°39'19" N., long. 122°31'44" W.; to lat. 37°41'47" N., long. 122°37'40" W., thence to the point of beginning.

**Area E.** That airspace extending upward from 2,100 feet MSL to and including 10,000 feet MSL within the area bounded by a line beginning at lat. 37°44'15" N., long. 122°28'11" W.; to lat. 37°47'12" N., long. 122°18'31" W.; to lat. 37°45'33" N., long. 122°14'38" W.; to lat. 37°44'42" N., long. 122°15'13" W.; to lat. 37°42'17" N., long. 122°11'39" W.; to lat. 37°39'53" N., long. 122°11'31" W.; to lat. 37°35'11" N., long. 122°11'13" W.; to lat. 37°35'32" N., long. 122°14'06" W.; to lat. 37°40'21" N., long. 122°14'12" W.; to lat. 37°42'40" N., long. 122°16'43" W.; to lat. 37°43'37" N., long. 122°18'59" W.; to lat. 37°43'52" N., long. 122°19'49" W.; to lat. 37°44'03" N., long. 122°20'43" W.; to lat. 37°44'10" N., long. 122°21'53" W.; to lat. 37°44'10" N., long. 122°23'03" W.; to lat. 37°44'04" N., long. 122°24'05" W.; to lat. 37°43'52" N., long. 122°25'04" W.; to lat. 37°43'31" N., long. 122°26'10" W.; to lat. 37°43'08" N., long. 122°27'05" W.; to lat. 37°42'32" N., long. 122°28'07" W., thence to the point of beginning.

**Area F.** That airspace extending upward from 2,100 feet MSL to and including 10,000 feet MSL within the area bounded by a line beginning at lat. 37°35'11" N., long. 122°11'13" W.; to lat. 37°34'12" N., long. 122°08'08" W.; to lat. 37°32'01" N., long. 122°09'06" W.; to lat. 37°29'30" N., long. 122°08'21" W.; to lat. 37°29'02" N., long. 122°11'17" W.; to lat. 37°30'53" N., long. 122°14'38" W.; to lat. 37°33'38" N., long. 122°17'48" W.; to lat. 37°33'39" N., long. 122°16'55" W.; to lat. 37°33'00" N., long. 122°15'24" W.; to lat. 37°31'29" N., long. 122°13'08" W.; to lat. 37°32'49" N., long. 122°12'15" W., thence to the point of beginning.

**Area G.** That airspace extending upward from 3,000 feet MSL to and including 10,000 feet MSL within the area bounded by a line beginning at lat. 37°50'22" N., long. 122°41'07" W.; to lat. 37°47'11" N., long. 122°36'40" W.; to lat. 37°51'35" N., long. 122°29'32" W.; to lat. 37°51'03" N., long. 122°20'24" W.; to lat. 37°47'58" N., long. 122°13'04" W.; to lat. 37°45'33" N., long. 122°14'38" W.; to lat. 37°47'12" N., long. 122°18'31" W.; to lat. 37°44'15" N., long. 122°28'11" W.; to lat. 37°42'32" N., long. 122°28'07" W.; to lat. 37°41'40" N., long. 122°29'11" W.; to lat. 37°44'35" N., long. 122°35'53" W.; to lat. 37°41'47" N., long. 122°37'40" W.; to lat. 37°39'19" N., long. 122°31'44" W.; to lat. 37°38'26" N., long. 122°29'41" W.; to lat. 37°36'42" N., long. 122°25'34" W.; to lat. 37°36'22" N., long. 122°25'42" W.; to lat. 37°36'09" N., long. 122°25'36" W.; to lat. 37°35'00" N., long. 122°24'17" W.; to lat. 37°34'29" N., long. 122°24'01" W.; to lat. 37°34'17" N., long. 122°23'50" W.; to lat. 37°40'37" N., long. 122°39'05" W.; to lat. 37°46'40" N., long. 122°47'13" W., thence to the point of beginning.

**Area H.** That airspace extending upward from 3,000 feet MSL to and including 10,000 feet MSL within the area bounded by a line beginning at lat. 37°39'53" N., long. 122°11'31" W.; to lat. 37°34'50" N., long. 122°03'58" W.; to lat. 37°30'24" N., long. 122°05'54" W.; to lat. 37°27'10" N., long. 122°07'39" W.; to lat. 37°26'26" N., long. 122°10'38" W.; to lat. 37°28'39" N., long. 122°13'10" W.; to lat. 37°32'19" N., long. 122°21'54" W.; to lat. 37°32'54" N., long. 122°22'20" W.; to lat. 37°32'57" N., long. 122°20'25" W.; to lat. 37°33'38" N., long. 122°17'48" W.; to lat.

37°30'53" N., long. 122°14'38" W.; to lat. 37°29'02" N., long. 122°11'17" W.; to lat. 37°29'30" N., long. 122°08'21" W.; to lat. 37°32'01" N., long. 122°09'06" W.; to lat. 37°34'12" N., long. 122°08'08" W.; to lat. 37°35'11" N., long. 122°11'13" W., thence to the point of beginning.

**Area I.** That airspace extending upward from 4,000 feet MSL to and including 10,000 feet MSL within the area bounded by a line beginning at lat. 37°55'31" N., long. 122°23'04" W.; to lat. 37°53'11" N., long. 122°09'28" W.; to lat. 37°41'50" N., long. 121°57'39" W.; to lat. 37°32'33" N., long. 121°55'58" W.; to lat. 37°28'19" N., long. 121°57'49" W.; to lat. 37°22'19" N., long. 122°05'04" W.; to lat. 37°20'04" N., long. 122°07'47" W.; to lat. 37°22'58" N., long. 122°19'36" W.; to lat. 37°29'37" N., long. 122°27'17" W.; to lat. 37°39'32" N., long. 122°51'17" W.; to lat. 37°44'03" N., long. 122°51'30" W.; to lat. 37°46'40" N., long. 122°47'13" W.; to lat. 37°40'37" N., long. 122°39'05" W.; to lat. 37°34'17" N., long. 122°23'50" W.; to lat. 37°34'01" N., long. 122°23'34" W.; to lat. 37°33'56" N., long. 122°23'19" W.; to lat. 37°33'36" N., long. 122°22'58" W.; to lat. 37°33'08" N., long. 122°22'36" W.; to lat. 37°32'54" N., long. 122°22'20" W.; to lat. 37°32'19" N., long. 122°21'54" W.; to lat. 37°28'39" N., long. 122°13'10" W.; to lat. 37°26'26" N., long. 122°10'38" W.; to lat. 37°27'10" N., long. 122°07'39" W.; to lat. 37°30'24" N., long. 122°05'54" W.; to lat. 37°34'50" N., long. 122°03'58" W.; to lat. 37°39'53" N., long. 122°11'31" W.; to lat. 37°42'17" N., long. 122°11'39" W.; to lat. 37°44'42" N., long. 122°15'13" W.; to lat. 37°45'33" N., long. 122°14'38" W.; to lat. 37°47'58" N., long. 122°13'04" W.; to lat. 37°51'03" N., long. 122°20'24" W.; to lat. 37°51'35" N., long. 122°29'32" W., thence to the point of beginning.

**Area J.** That airspace extending upward from 5,000 feet MSL to and including 10,000 feet MSL within the area bounded by a line beginning at lat. 38°00'00" N., long. 122°25'00" W.; to lat. 37°58'50" N., long. 122°05'45" W.; to lat. 37°53'11" N., long. 122°09'28" W.; to lat. 37°55'31" N., long. 122°23'04" W.; to lat. 37°51'35" N., long. 122°29'32" W.; to lat. 37°47'11" N., long. 122°36'40" W.; to lat. 37°50'22" N., long. 122°41'07" W., thence to the point of beginning.

**Area K.** That airspace extending upward from 6,000 feet MSL to and including 10,000 feet MSL within the area bounded by a line beginning at lat. 37°58'50" N., long. 122°05'45" W.; to lat. 37°54'06" N., long. 121°59'12" W.; to lat. 37°51'17" N., long. 121°58'51" W.; to lat. 37°53'11" N., long. 122°09'28" W.; thence to the point of beginning.

**Area L.** That airspace extending upward from 5,000 feet MSL to and including 10,000 feet MSL within the area bounded by a line beginning at lat. 37°53'11" N., long. 122°09'28" W.; to lat. 37°51'17" N., long. 121°58'51" W.; to lat. 37°41'50" N., long. 121°57'39" W.; thence to the point of beginning.

**Area M.** That airspace extending upward from 6,000 feet MSL to and including 10,000 feet MSL within the area bounded by a line beginning at lat. 37°39'32" N., long. 122°51'17" W.; to lat. 37°29'37" N., long. 122°27'17" W.; to lat. 37°22'58" N., long. 122°19'36" W. to lat. 37°20'04" N., long. 122°07'47" W.; to lat. 37°22'19" N., long. 122°05'04" W.; to lat. 37°28'19" N., long. 121°57'49" W.; to lat. 37°32'33" N., long. 121°55'58" W.; to lat. 37°32'27" N., long. 121°53'05" W.; to lat. 37°32'54" N., long. 121°51'09" W.; to lat. 37°28'25" N., long. 121°49'25" W.; to lat. 37°24'12" N., long. 121°55'56" W. to lat. 37°19'04" N., long. 122°03'49" W.; to lat. 37°10'36" N., long. 122°00'30" W.; to lat. 37°15'08" N., long. 122°24'54" W.; to lat. 37°15'04" N., long. 122°24'55" W.; to lat. 37°15'03" N., long. 122°25'01" W.; to lat. 37°14'54" N., long. 122°25'07" W.; to lat. 37°14'39" N., long. 122°25'00" W.; to lat. 37°14'29" N., long. 122°25'03" W.; to lat. 37°14'01" N., long. 122°24'53" W.; to lat. 37°13'34" N., long. 122°24'30" W.; to lat. 37°13'18" N., long. 122°24'26" W.; to lat. 37°13'02" N., long. 122°24'31" W.; to lat. 37°12'01" N., long. 122°24'30" W.; to lat. 37°11'24" N., long. 122°23'57" W.; to lat. 37°11'10" N., long. 122°23'54" W.; to lat. 37°11'01" N., long. 122°23'38" W.; to lat. 37°11'03" N., long. 122°23'27" W.; to lat. 37°10'59" N., long. 122°22'55" W.; to lat. 37°10'45" N., long. 122°22'39" W.; to lat. 37°10'34" N., long. 122°22'20" W.; to lat. 37°10'25" N., long. 122°22'09" W.; to lat. 37°10'11" N., long. 122°21'57" W.; to lat. 37°15'22" N., long. 122°50'17" W., thence to the point of beginning.

**Area N.** That airspace extending upward from 8,000 feet MSL to and including 10,000 feet MSL within the area bounded by a line beginning at lat. 37°10'36" N., long. 122°00'30" W.; to lat. 37°15'08" N., long. 122°24'54" W.; to lat. 37°15'04" N., long. 122°24'55" W.; to lat. 37°15'03" N., long. 122°25'01" W.; to lat. 37°14'54" N., long. 122°25'07" W.; to lat. 37°14'39" N., long. 122°25'00" W.; to lat. 37°14'29" N., long. 122°25'03" W.; to lat. 37°14'01" N., long. 122°24'53" W.; to lat. 37°13'34" N., long. 122°24'30" W.; to lat. 37°13'18" N., long. 122°24'26" W.; to lat. 37°13'02" N., long. 122°24'31" W.; to lat. 37°12'01" N., long. 122°24'30" W.; to lat. 37°11'24" N., long. 122°23'57" W.; to lat. 37°11'10" N., long. 122°23'54" W.; to lat. 37°11'01" N., long. 122°23'38" W.; to lat. 37°11'03" N., long. 122°23'27" W.; to lat. 37°10'59" N., long. 122°22'55" W.; to lat. 37°10'45" N., long. 122°22'39" W.; to lat. 37°10'34" N., long. 122°22'20" W.; to lat. 37°10'25" N., long. 122°22'09" W.; to lat. 37°10'11" N., long. 122°21'57" W.; to lat. 37°05'50" N., long. 121°58'38" W., thence to the point of beginning.

**Area O.** That airspace extending upward from 7,000 feet MSL to and including 10,000 feet MSL within the area bounded by a line beginning at lat. 37°54'06" N., long. 121°59'12" W.; to lat. 37°51'25" N., long. 121°55'58" W.; to lat. 37°42'02" N., long. 121°51'17" W.; to lat. 37°41'50" N., long. 121°57'39" W.; to lat. 37°51'17" N., long. 121°58'51" W., thence to the point of beginning.

**Area P.** That airspace extending upward from 7,000 feet MSL to and including 10,000 feet MSL within the area bounded by a line beginning at lat. 37°32'54" N., long. 121°51'09" W.; to lat. 37°33'53" N., long. 121°46'49" W.; to lat. 37°29'10" N., long. 121°45'04" W.; to lat. 37°26'32" N., long. 121°45'50" W.; to lat. 37°22'31" N., long. 121°52'05" W.; to lat. 37°24'12" N., long. 121°55'56" W.; to lat. 37°28'25" N., long. 121°49'25" W., thence to the point of beginning.



**Area Q.** That airspace extending upward from 8,000 feet MSL to and including 10,000 feet MSL within the area bounded by a line beginning at lat. 37°41'50" N., long. 121°57'39" W.; to lat. 37°42'02" N., long. 121°51'17" W.; to lat. 37°35'02" N., long. 121°37'45" W.; to lat. 37°31'02" N., long. 121°37'11" W.; to lat. 37°23'32" N., long. 121°42'43" W.; to lat. 37°22'31" N., long. 121°52'05" W.; to lat. 37°26'32" N., long. 121°45'50" W.; to lat. 37°29'10" N., long. 121°45'04" W.; to lat. 37°33'53" N., long. 121°46'49" W.; to lat. 37°32'27" N., long. 121°53'05" W.; to lat. 37°32'33" N., long. 121°55'58" W., thence to the point of beginning.

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